Running head: First Aid Curriculum

The inclusion of first aid in an injury prevention curriculum program.

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Abstract

Prompt first aid can have considerable benefits. The Skills for Preventing Injury in Youth (SPIY) program aims to teach, in part, first aid skills along with additional injury prevention strategies. The approach to including first aid is both as an injury prevention strategy and a way in which to reduce the severity of injuries once they occur. This paper outlines an implementation trial of the SPIY program with particular emphasis on the delivery and implementation of first aid skills. SPIY demonstrated effectiveness with regard to first aid knowledge and as an injury prevention program. SPIY is taught in the Year 9 Health curriculum by HPE teachers. Students and teachers who undergo or deliver such training offer important perspectives about implementation. In addition independent observation of delivery provides further information about the program. The research aimed to examine teachers' and students' experiences of first aid activities within a school-based injury prevention and control program and identify key issues in delivery from independent observation of the program. Focus groups were held with 8 teachers who delivered, and 70 students who participated in the SPIY curriculum program. Results showed favourable reports on the delivery of first aid material however teachers noted challenges in delivering practical activities. In sum, first aid can be effectively implemented within the high school setting and both students and teachers identified multiple benefits and positive experiences after undertaking first aid training.

The inclusion of first aid in an injury prevention curriculum program.

The problem of adolescent injury

In Australia there are around 7,800 deaths registered as being caused by injury each year. Injury also accounted for greater than $4 billon of health care expenditure in 2001-02 (AIHW, 2004). In an Australian study by Chapman and Sheehan (2005), 53% of students aged 13-14 years self-reported a transport injury in the 6 months prior to the survey (related to being a passenger, driver, cyclist or pedestrian). Similarly, in an extensive US survey of Grade 9 to 12 students' self-reported behaviour in the past 30 days, 22.2% stated that they required a doctor or nurse for an injury, 28.8% had ridden with a drink driver and 9.9% had themselves driven after drinking. Further, 67.9% rode a bicycle in the past year and 83.4% of these adolescents reported that they rarely or never wore a helmet (Eaton et al., 2006).

This high rate of injury and engagement in risk-taking among adolescents suggests that this is an important developmental period in which to prevent and control injury. In this paper it is argued that training in first aid skills may be an appropriate strategy. Adolescent risk-taking is typically a group activity (Arnett, 2002; Preusser, Ferguson, & Williams, 1998). For adolescents there may not be an adult or medical professional to assist with managing the injury but there is likely to be another young person in the immediate surrounds who might offer assistance and obtain appropriate help. Thus it may be particularly relevant for adolescents to be skilled in managing injuries as well as in reducing their involvement in risk-taking behaviour.

First aid as an injury prevention and control strategy

Hussain and Redman (1994) reported that of 152 accidental injury deaths that occurred outside of hospital, 39% were potentially preventable. The authors suggested that first aid training should be more widely available as a potential strategy to reduce injury. Clark et al. (2002) indicated that the chances of survival are increased when a bystander follows the 'chain-of-survival' first aid technique. Assistance given in the few minutes immediately after a motor vehicle crash for example can have considerable

benefits to those who are injured in terms of future health and well-being (Brodsky, 1984; Peterson & Russell, 1999). Differences can be associated with preventing death but also relate to reducing the severity of injury.

In addition, there is some research to suggest that first aid training has benefits in lessening the severity of injury in that it may motivate reduced risk-taking behaviour. Lingard (2002) found greater use of protective equipment and safer practices by construction workers following a standard first aid program. In focus group discussions with these construction workers, they also self-reported reduced overall risk-taking in the workplace. Further, Glendon and McKenna (1985) found reduced traffic crashes in an English town where 1200 individuals completed first aid training compared to a town where no such program was implemented. There are methodological limitations to these studies, however they provide some indication that first aid training might be preventative (i.e. reduce risk-taking) as well as control the severity of injuries.

Reducing adolescent injury through the high school curriculum

First aid skills can be taught to young people and their knowledge and skills retained over time. In the UK, 10-12 year olds have been shown to retain first aid skills for a period of 6 months (Toner et al., 2007). In the U.S., Kelley et al. (2006) found that 13 to 17 year olds can retain knowledge of CPR after at least 4 weeks. Campbell et al. (2001) compared a first aid training course delivered over 8 weeks with a comparison condition (an alcohol and drug prevention program of similar dose and duration). The adolescent participants in the first aid course had greater skills in responding to an emergency, understanding of a first aid kit and how to use it, and overall greater skills in first aid than those in the comparison program group. Thus first aid skills are able to be taught and retained by early adolescents. There is also evidence from other programs to suggest behaviour change can be achieved in a school context. For example, a number of effective curriculum approaches have been used to reduce alcohol and drug use and other risk-taking behaviours (Ellickson et al., 2003; Sheehan et al., 1996). School programs

attempt to highlight attitudes towards risky behaviour and the potential benefits to not engaging in risks (Mc Bride et al., 2004).

Skills for Preventing Injury in Youth (SPIY) program

One program that has demonstrated effectiveness in reducing risk-taking behaviours and injury is the Skills for Preventing Injury in Youth Program (Buckley et al., accepted; Buckley & Sheehan, 2009). The SPIY program was designed with the assistance of St John Ambulance and through collaborations with researchers from the Centre for Accident Research and Road Safety – Queensland. The program was implemented in the high school curriculum of Health classes in a sample of South-East Queensland state high schools. It aimed to develop skills in injury prevention and control (including for example, transport and violence-related injuries) through combining first aid training with cognitive behavioural prevention strategies. The program targeted change in reducing adolescent risk-taking behaviour and taught skills in facilitating adolescents to protect their friends from engaging in risk-taking. The SPIY program consisted of a set of classroom activities in 50 minute lessons to be delivered over eight weeks. A teacher training day, teacher's manual and student workbook were included with the program. With regard to first aid, teachers received certification in cardiopulmonary resuscitation (CPR) from St John Ambulance. Typically each lesson included the presentation of a risk-taking and injury scenario, an introduction to the management of first aid for the resulting injury and a cognitive behavioural strategy for preventing the risk-taking behaviour including through peer protection.

The present study

The aim of this study is to analyse data relating to the implementation of the first aid component of the Skills for Preventing Injury in Youth program, with particular attention to how first aid skill development can be taught during early adolescence and in the school setting.

Method

Participants

Participants were 70 students (n=32 males) from three randomly selected classes of those that participated in the Skills for Preventing Injury in Youth (SPIY) program (approximately 20% of all intervention students). There were approximately 6 to 9 students in each of ten focus groups. To maintain confidentiality no identifying details were collected from focus group participants, however the focus groups were conducted within a week of a quantitative study (Buckley, Sheehan & Chapman, accepted) and as such it is likely that the focus group sample is representative of the larger sample with regard to age (mean = 13.49) and sex (49% male). All students attending the selected class on the day were involved in the focus groups and no students refused their consent to participate in the discussions.

Nine of the eleven teachers (81%) who were originally trained and facilitated the program also participated in this study. The remaining two teachers involved in program delivery were unavailable at the time of the discussions.

Measures and procedure

Student experiences of the SPIY program and change in behaviour were examined through several open-ended questions, including, for example, "What did you learn last term?" and "Do you think you changed your behaviour?" Probing questions were used to follow-up and elicit greater detail following the first open-ended question. Focus groups, facilitated by a researcher trained in psychology, were approximately 20 minutes in duration and were audio recorded with participant consent.

Participant teachers initially completed a pen and paper questionnaire. Questions were designed to illicit information regarding coverage of the prevention material and reasons for failure to cover material. Following the survey, related issues were discussed. The discussion, which was approximately 20 minutes in duration, used guided prompts that were designed to assess key aspects of the program and overall perceptions. In one of the participating schools, all teachers were grouped after a staff meeting. In the second school, two teachers participated together in the discussion, while a further individual teacher

was involved in an individual interview. The structure and timing of the discussions were designed to be most convenient to the schools and occurred either in a lunch break or after school.

In addition, an independent observer was employed to examine the delivery of the program and student and teacher experience in vivo. The observer, a former school teacher, was employed by the research team to examine approximately 20% of all classes. A standardised checklist was used for each class observed.

Results

Students' experience of first aid

Students were asked in the focus group discussions what they learnt from SPIY. All participants from each group commented on learning about first aid with regard to two acronyms, "DRABCD" (ie. Danger, Response, Airway, Breathing, Cardiopulmonary resuscitation, Defibrillation) and "COWS" (ie Can you hear me? Open your eyes. What's my name? Squeeze my hand.). These two acronyms are used to remember the procedures to prioritise first aid and check for casualty response. Many students also elaborated on why these two acronyms were most learnt, for example, "because you got to practice" (male) and "they're easy to remember" (female).

In relation to participants' perceptions of behaviour change, most suggested they were more likely to give first aid now compared with before the program, "more likely to help people" (female). A number of insights were also provided in some of the focus groups with regard to helping a friend, including the potential difficulty; for example, "I'd be scared I'd break a rib" (female) and, "you might end up, like, killing the fella" (male). Most also recognised that it was important to get an adult or other experienced person to help, "if I was the only one there I would. But if there was someone older and more knowing about it, I'd leave it up to them and maybe go get help or something else" (male).

Material completion: Teachers' reports

Teachers generally felt that they covered most of the first aid material each week. Around 4 of the 9 teachers each week felt they covered ‘all’ of the first aid material, between 4 and 5 reported covering ‘most’ of the first aid material each week and each week there was no more than 1 teacher who indicated they covered only ‘some’ of the first aid material.

Teacher reports of the reasons for not implementing particular activities are presented in Table 1. Teachers reported that the most common reason for failing to implement an activity was class disruption and too much material for lesson times (55.6% indicated ‘*yes*’), whereas no teachers felt that incompletion was due to the program material being unclear.

INSERT TABLE 1 HERE

Generally teachers viewed the program favourably. For example, one teacher succinctly reported it was, “overall, good”. However most teachers reported or agreed with others that there were not enough lessons in the school term to cover all the material in the lessons. One teacher suggested that it “needed more weeks”. The physical materials appeared to be viewed particularly favourably both in terms of the student workbook and the teachers’ manual. One teacher commented that she might use the materials again, “the resources were fantastic; I put mine up on my shelf”.

The majority of teacher comments focused on the use of class discussions and interactive practical activities relating to first aid techniques and how easy or difficult they were to implement and facilitate. Many teachers felt that student behaviour issues made implementing discussions more challenging. Several of these teachers then reinforced the challenge of covering material in the allotted time as behavioural disruptions reduced the time available for discussions. For example, one teacher noted, “I just found all the questions and things sometimes took me a little too long because they were just a nightmare…maybe have a backup worksheet”. However it is apparent that although it was challenging to implement practical activities they did indeed occur.

Independent observations

Time (measured in minutes) spent on each activity was measured by an independent observer and compared with time (in minutes) allocated in the design of the program. Teachers spent more time covering first aid material than was allocated (1.19 times). In terms of activities that were skipped, all teachers skipped sessions on triage, dealing with aggressive patients and defibrillation. Further, additional time was spent by all teachers on defining first aid, brief overview of checking for danger, and first aid for an alcohol overdose.

Discussion

The majority of research on first aid skills training is focused on adults. Nevertheless, there is some evidence, particularly from the U.S. and the U.K., to suggest that first aid can be taught and learned by high school students. The evaluation of first aid training for adolescents may provide an important insight into the value in disseminating first aid programs to the community.

The study sought to examine the implementation of the first aid component of an injury prevention program for Year 9s. A variety of methods were used to understand the implementation and they appeared to provide complementary data. The findings from students indicated the first aid strategies were well received. Program satisfaction is important to facilitate continued implementation of a curriculum (Fagan & Mahalic, 2003). The information is also valuable in early stages of the curriculum design process to provide detail about activities that should continue to be used to deliver first aid.

Of interest is that students perceived greater learning when they were able to practice skills. Being able to ‘learn by doing’ is a particularly important pedagogy with regard to first aid skills. In addition, part of the strategy of the curriculum was to include practical activities to deliver first aid and better facilitate interaction and discussion in the prevention messages. The other strategy that appeared to be well remembered was the use of acronyms, COWS and DRABCD. Students appeared to remember the

acronym, what it stood for and the first aid implications of the acronym. The use of mnemonics is a commonly used memory aid and in this case it also seemed to be highly appropriate.

Not surprisingly teachers reported behaviour management challenges in the classroom and particularly so in delivering interactive and practical material. Such challenges have important implications for curriculum design in that sufficient time must be allocated for activities. Perhaps also it suggests a need to develop activities which are short and directive. Of note is that there was some difference between the teacher and observer reports of coverage of material. Although they were not measured in the same manner it appears that the observation data indicated less coverage of material than teachers reported. Whilst this is a common finding in process evaluations of school curriculum programs it does highlight the value in collecting evaluation data from multiple sources. Teachers provided feedback in focus group discussions suggesting that they amended material slightly and thought that they were still meeting the aims of the activity. Such information provides valuable feedback for the future design of SPIY and other school based first aid programs, indicating a need to provide specific instructions on which activities need to be run as designed and which can be taught more flexibly. For example, one teacher in the absence of resources of a manikin had students draw chalk outlines to get an understanding of the site for chest compressions. The changes to delivery processes made by teachers also provide useful information in terms of ways in which activities may be altered for the better or for pragmatic reasons.

In summary it is positive to note that the program was well received. If teachers and students value a curriculum there is a much greater likelihood that it will continue to be implemented as designed (Fagan & Mahalic, 2003). Although the program demonstrated effectiveness in reducing risk-taking behaviour and increasing first aid knowledge, the implementation and program satisfaction evaluation is an important process to best ensure continued delivery of successful programs.

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Table 1

Teachers Reported Difficulties in Implementation

	Number of Responses	
Activity	Yes	No
Too much in time frame	5	4
Unclear manual	0	9
Sections unimportant/irrelevant	2	7
Class disruptions	5	4
Higher literacy required of students	2	7
Not appropriate for other reasons	2	7

Note. There was no missing data (N=9)